## Evaluation of patients with chronic HBV infection

| **Initial evaluation** |
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| 1. History and physical examination* |
| 2. Family history of HBV infection, liver disease, HCC |
| 3. Laboratory tests to assess liver disease - complete blood counts with platelets, aminotransferase levels, total bilirubin, alkaline phosphatase, albumin, and INR |
| 4. Tests for HBV replication - HBeAg, anti-HBe, HBV DNA |
| 5. Tests to rule out viral coinfections - anti-HCV, anti-HDV (in persons from countries where HDV infection is common and in those with history of injection drug use), and anti-HIV¶ |
| 6. Tests to screen for HCCΔ - (eg, ultrasound) |
| 7. Tests to screen for fibrosis◇ - vibration-controlled transient elastography, serum fibrosis panel, or liver biopsy§ |
| **Suggested follow-up for patients not considered for treatment: HBeAg+, HBV DNA >20,000 int. units/mL, and normal ALT without cirrhosis¥** |
| ALT every 3-6 months and HBeAg every 6-12 months |
| If ALT levels increase between 1 to 2 x ULN‡:<br>▪ Recheck ALT every 1-3 months and HBeAg every 6 months.<br>▪ Consider liver biopsy or noninvasive assessment of fibrosis if ALT levels remain persistently elevated, age >40, and/or family history of HCC. Recommend treatment if biopsy shows moderate/severe inflammation or significant fibrosis (eg, METAVIR score ≥F2). |
| If ALT increases to >2 x ULN‡ for 3-6 months and HBeAg+, HBV DNA >20,000 int. units/mL, recommend treatment |
| Screen for HCC in relevant populationΔ |
| **Suggested follow-up for patients not considered for treatment: HBeAg-, HBV DNA <2000 int. units/mL, and normal ALT without cirrhosis¥** |
| ALT every 3 months for 1 year, if persistently normal, ALT every 6-12 months |
| If ALT increases between 1 to 2 x ULN‡:<br>▪ Check serum HBV DNA level and exclude other causes of liver disease.<br>▪ Monitor ALT and HBV DNA every 3 months.<br>▪ Consider liver biopsy or noninvasive assessment of fibrosis if ALT remains elevated on serial tests or if HBV DNA persistently ≥2000 int. units/mL. Recommend treatment for patients with moderate/severe inflammation or significant fibrosis. |
| If ALT increases to >2 x ULN, recommend treatment if HBV DNA >2000 int. units/mL |
| Screen for HCC in relevant populationΔ |

AFP: Alpha feto protein; ALT: alanine aminotransferase; anti-HBe: antibody to HBeAg; HBV: hepatitis B virus; HBeAg: hepatitis B e antigen; HCC: hepatocellular carcinoma; HCV: hepatitis C virus; HDV: hepatitis delta virus; ULN: upper limit of normal.

* Patient should be evaluated for signs and symptoms of cirrhosis, risk factors for coinfections, alcohol use, and information on vaccination status.

¶ In patients who have not undergone one-time screening and those with ongoing risk factors for HIV-infection.

Δ Refer to the topic that discusses screening of hepatocellular carcinoma.

◇ Refer to the topics in UpToDate that discuss noninvasive assessment of hepatic fibrosis.

§ Liver biopsy can also assess severity of inflammation and help rule out other causes of liver disease, information that will not be provided by noninvasive assessment of liver fibrosis.

¥ Cirrhosis is based upon findings from the initial evaluation. Patients with advanced fibrosis determined by noninvasive methods should be evaluated using a second method, and if results are concordant, consider managing the same way as patients with cirrhosis.

‡ The AASLD recommends using an ALT >30 U/L for men and >19 U/L for women as the upper limit of normal rather than local laboratory values.

*References:*

1. *Lok ASF, McMahon BJ. Chronic hepatitis B: Update 2009. Hepatology 2009; 50:661. Available online at http://publish.aasld.org/Pages/Default.aspx. Accessed September 8th 2009. Copyright © 2009 American Association for the Study of Liver Diseases.*
2. *Terrault NA, Bzowej NH, Chang KM, et al. AASLD guidelines for treatment of chronic hepatitis B. Hepatology. 2016 Jan; 63(1):261-83.*

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